

# Principles of Earned Value Management

Presented by

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# EVMS = Earned Value Management Systems

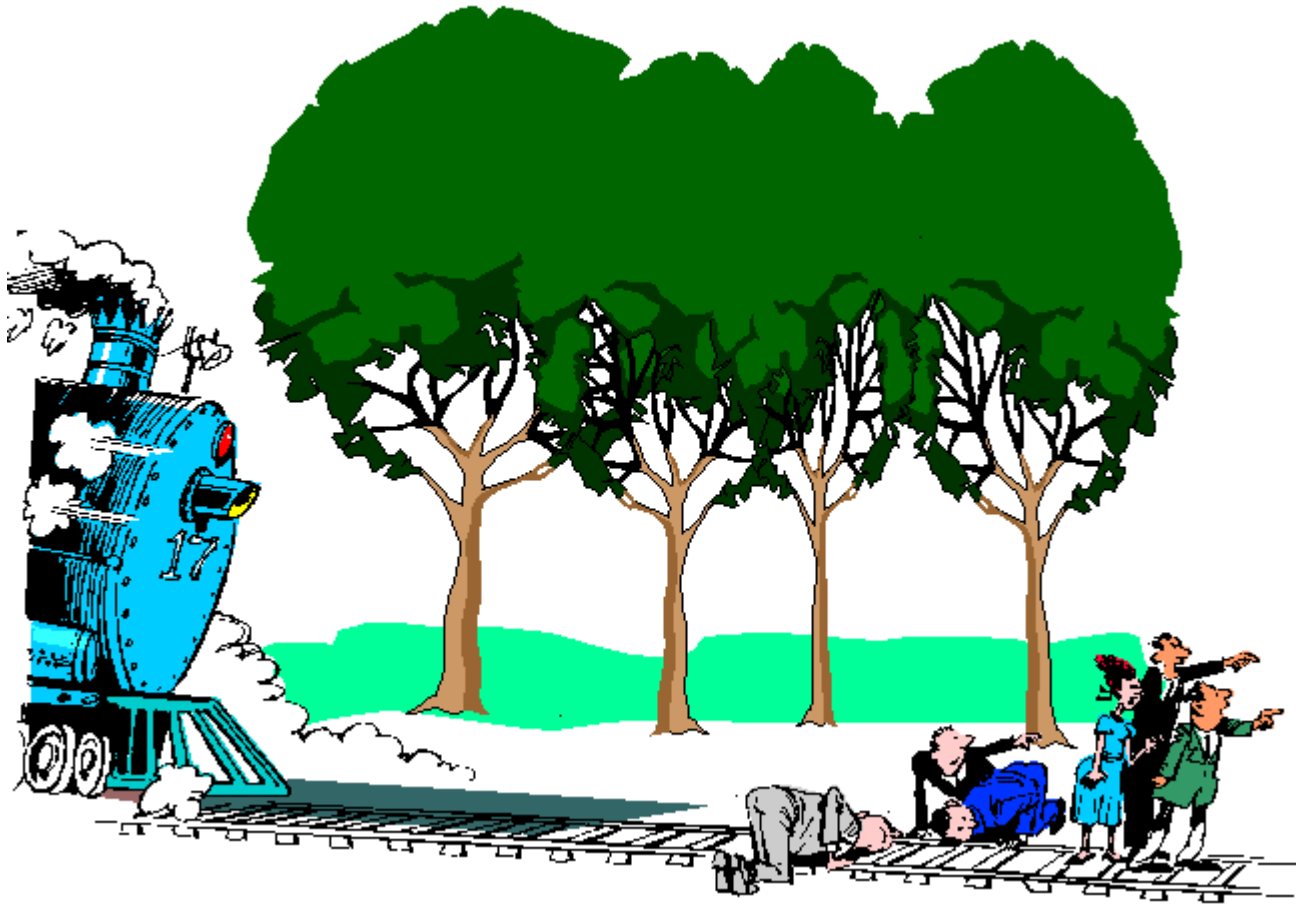
EVMS Can Help  
Cage The Beast



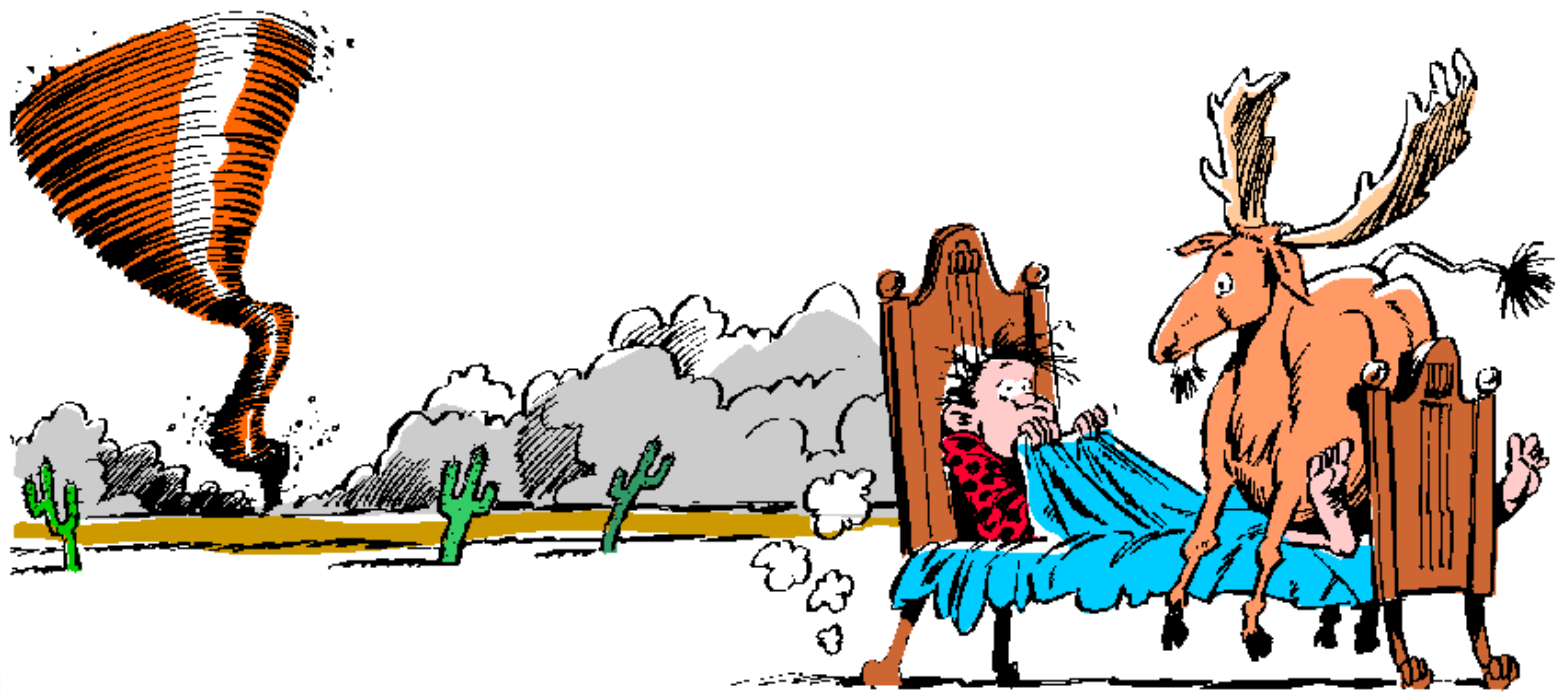
# Projects are Challenging Because:

- You are first
- You have uncertainty (risk)
- You start from scratch
- You have explicit goals
- You want to go out of business
- You are working under a microscope

# The Law of Project Management



**Everything that can go wrong,  
already has gone wrong;  
you just don't know it yet.**



*Rule # 2:*

When we wake up, we won't  
be in Kansas anymore!

# The Stages of a Project

- Optimistic estimating
- Wild exuberance
- Grim realization
- Angry denial
- Disaster and finger pointing
- Search for the guilty
- Punishment of the innocent
- **PROMOTION OF THE NON-PARTICIPANTS**



# Management Work – a Set of Processes

**Organize** – People, Capital, Assets, Work

**Plan** – Goals, Objectives, Strategies, Schedule, Budget

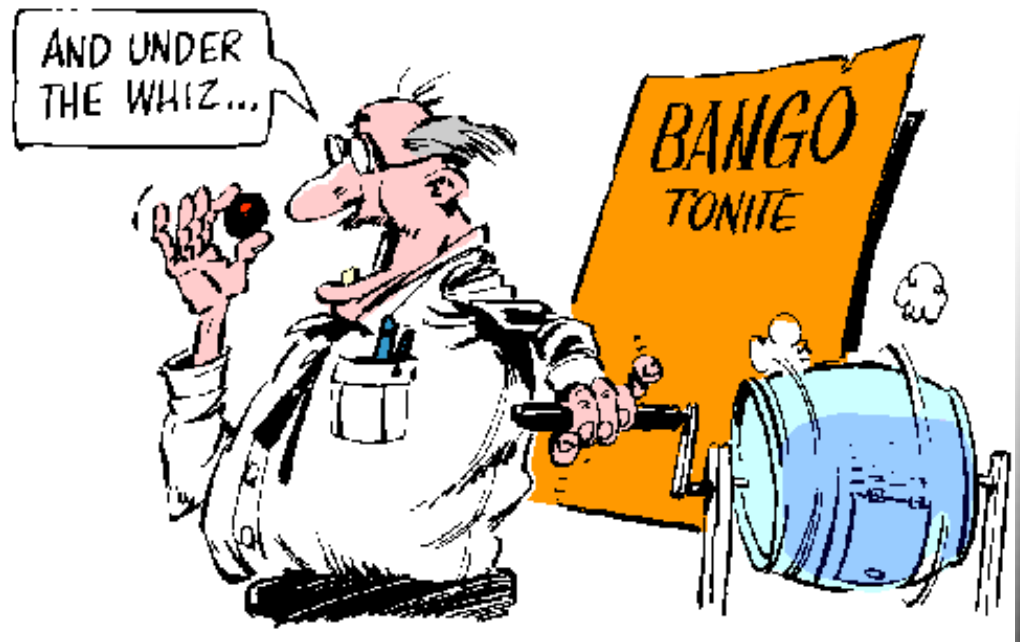
**Direct** – Authorize, Order, Lead, Show, Assign

**Control** – Measure, Analyze, Re-direct, Re-organize, re-plan

A management information system is designed to assist with the process of management – to support each step.

# Consider The Risks

**Rule # 2** - The new  
“Whizbang” will  
often start with  
a Whiz and end  
with a Bang.





# Managing Technical Requirements

- **Technical Requirements Management**
  - *Work Breakdown Structure (WBS) and WBS Dictionary*
- **Integrated Master Plan (IMP)**
- **Technical Performance Measurement**
  - *“Good” Metrics*

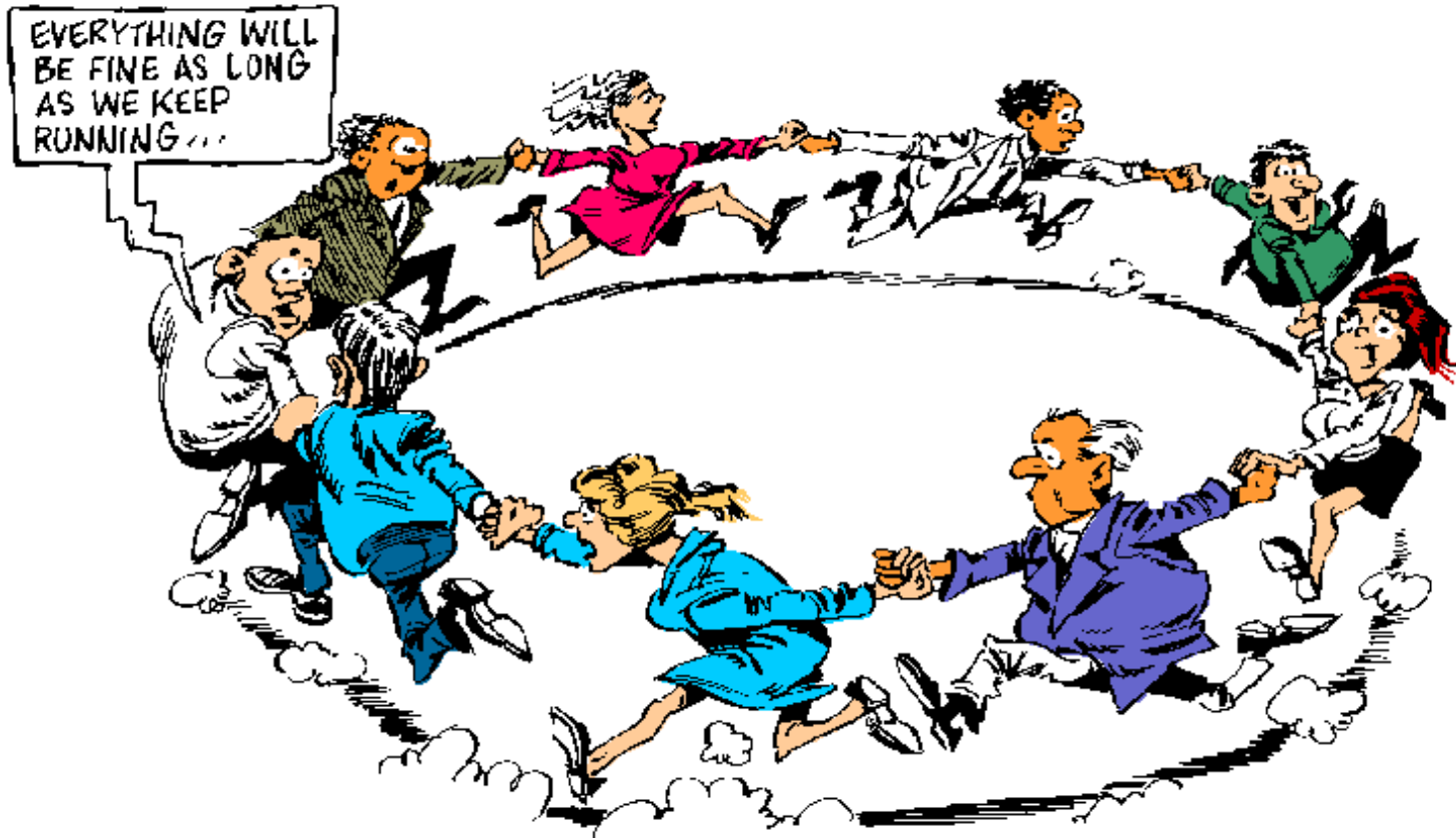
# The Big Three

**SCOPE**

**SCHEDULE**

**BUDGET**

# Being busy doesn't mean you are moving ahead.



*Rule # 2-*  
A game of ring-around-the-rosey" ends  
with everyone falling down.

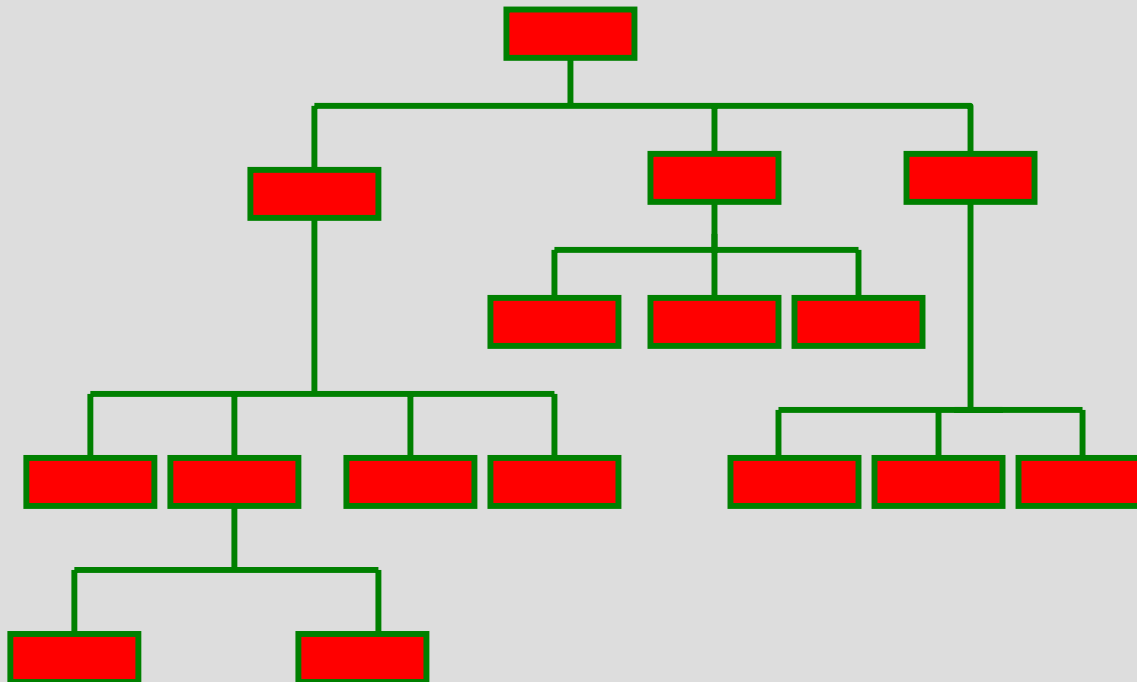
*Rule #2* - A wolf eats like a wolf,  
because he can not **CUT** his food.



Projects are big and complex; use a Work Breakdown Structure (WBS) to **CUT** the scope into manageable chunks

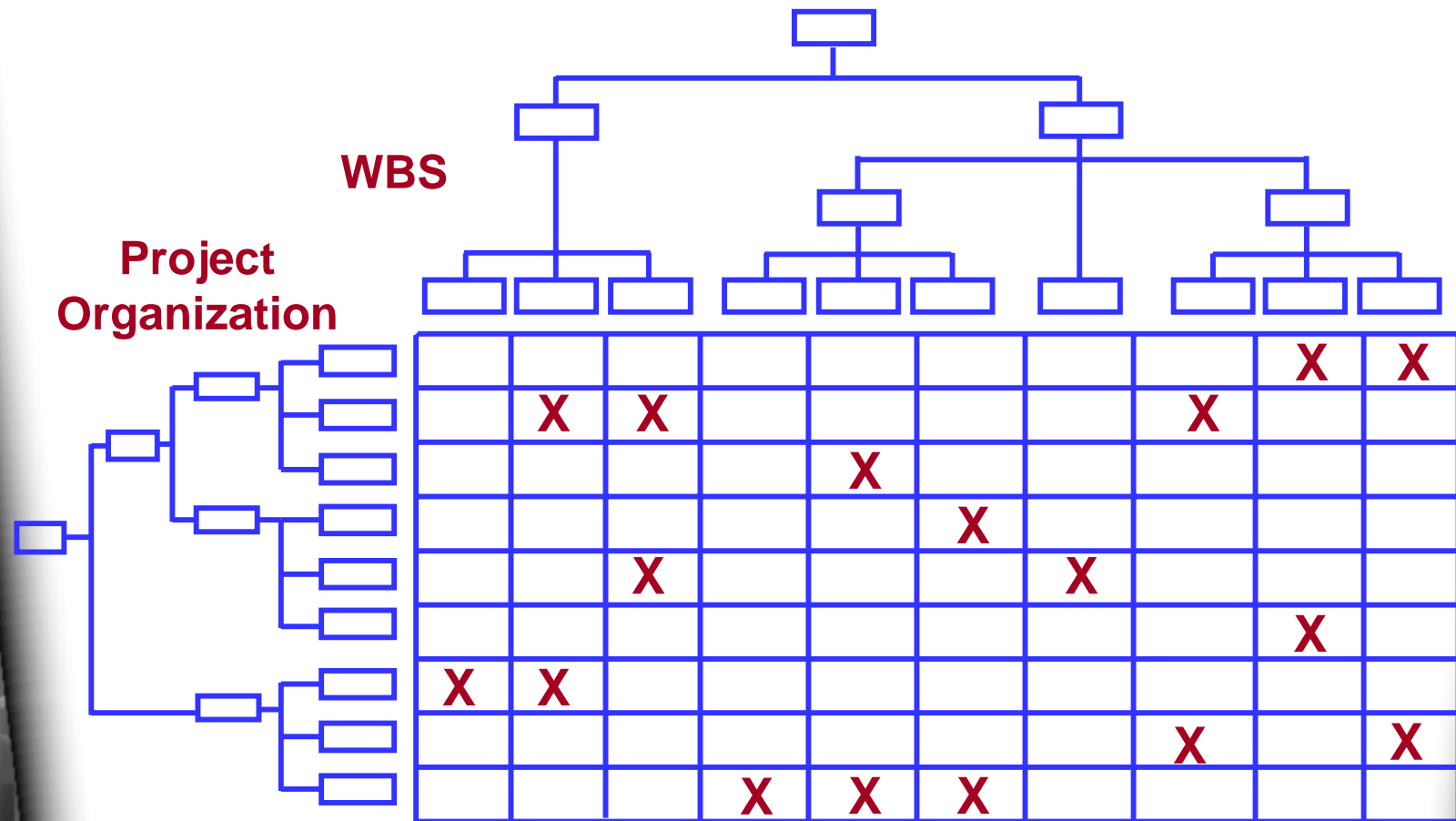
# Work Definition

## Work Breakdown Structure



## WBS DICTIONARY

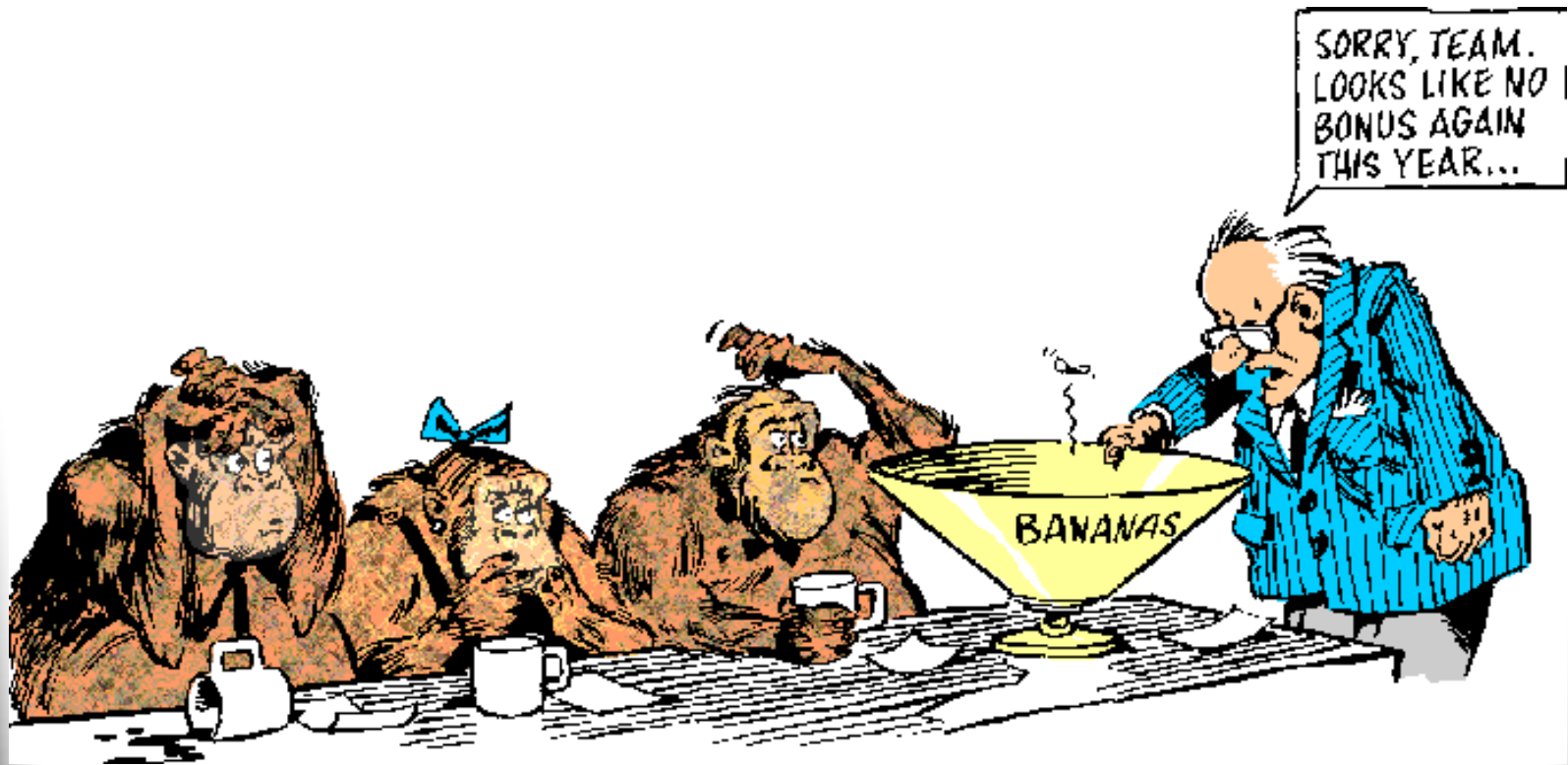

# Responsibility Assignment Matrix And Control Account Establishment



# Managing The Schedule

- **Schedule Baseline Management**
- **Performance versus Plan**
- **Schedule Analysis and Forecast**
  - *Schedule variances are the leading indicators of potential cost variances*

# Schedule The Work



***Rule #2 - The “monkey project” approach will not work for you - a schedule will.***



# Make a Realistic Plan Near Term & Far Term

**Rule #2** -Everything looks good,  
until it begins look **BAD**.



**Corollary:**

If you sail far enough, you will fall off the edge of the

**WORLD**

# Schedule Integration

## "Schedules *Must* Tier"

### Total Program Level

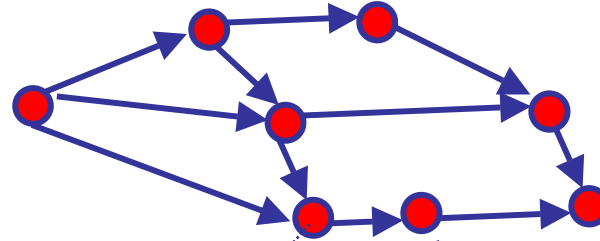
- Customer
- Senior management
- Program Office

### Intermediate Level

- Customer
- Program Office
- Functional management
- Control Account Managers

### Detail Program Level

- Program Office
- Functional management
- Control account Managers



Contract/  
program  
schedule

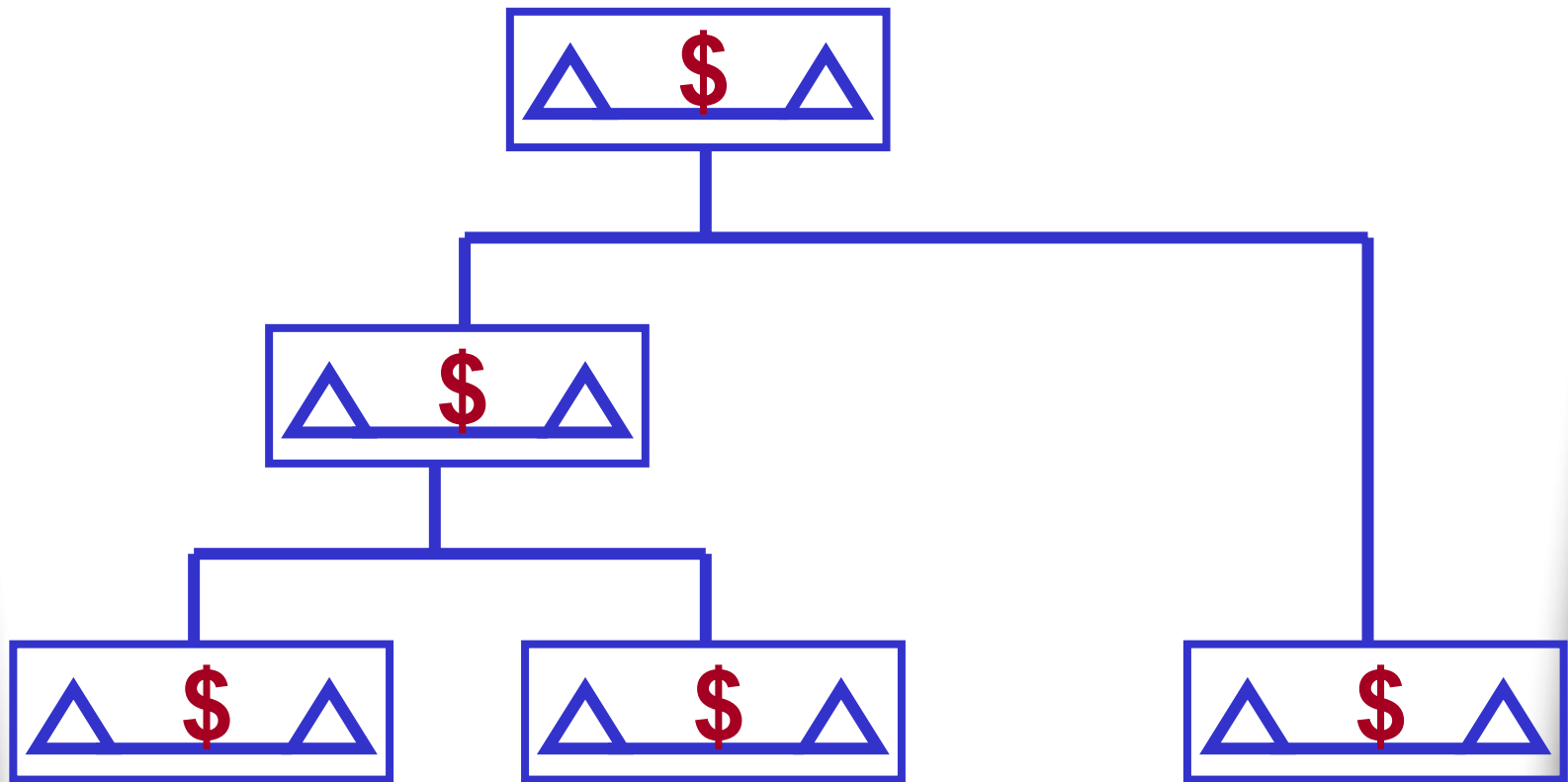
Item	1	2	3	4	5	6	7
Control Account 14	△			△			
Control Account 15			△		△		
Control Account 16		△			△		
Control Account 17				△		△	
Control Account 18			△				△

Major event  
or functional  
organization  
milestone  
schedule

Control Account 16	△	Start		Stop	△
WP No. 1	△		△		
WP No. 2		△		△	
WP No. 3			△		△
WP No. 4				△	
WP No. 5			△		△

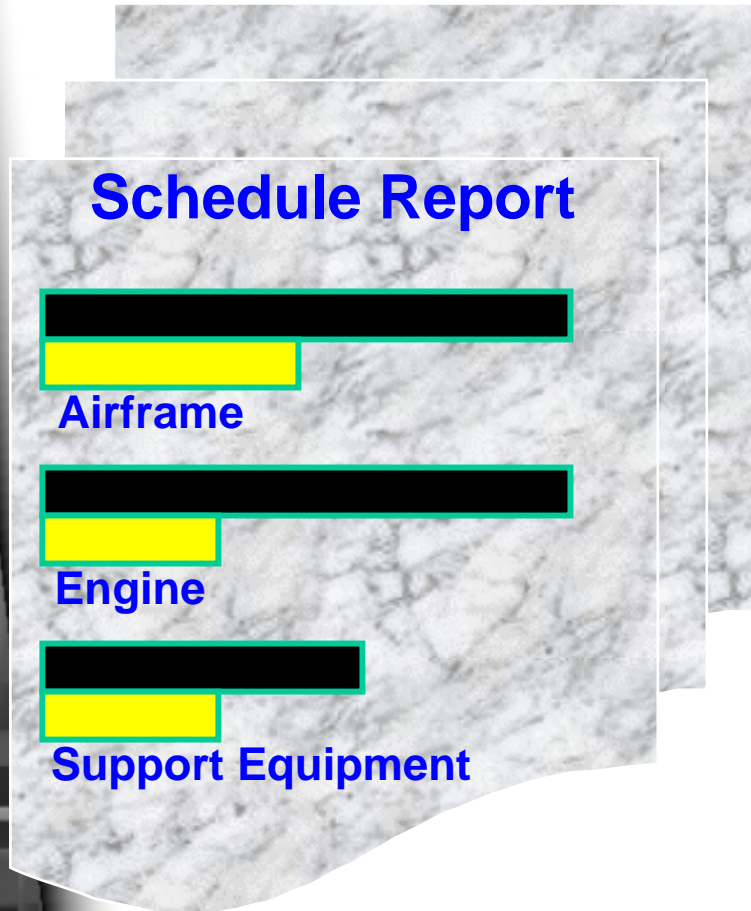
Control  
Account and  
work  
package  
schedules

# Integrating Cost and Schedule



**For *each* WBS element**

# Cost/Schedule Mismatch



**By System**

**VS.**

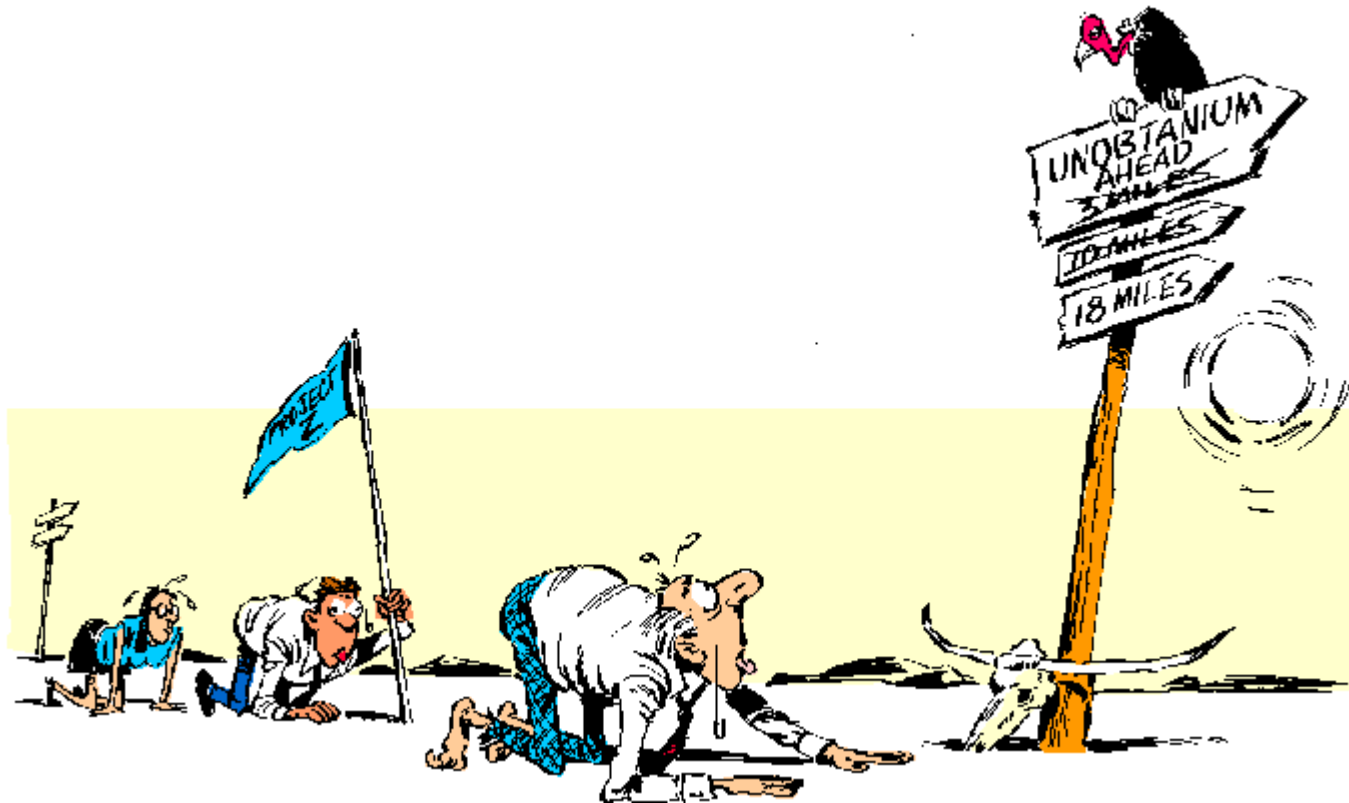


**By Discipline**

# Two Views Of The World

- **Performance Measurement Baseline**
  - *Source of Planned Value and Earned Value*
- **Working Version**
  - *Time-phased, resource-loaded Plan-To-Complete*

# Make a plan with that is measurable



**Rule #2** - You will never know how far you've gone on the road to "Unobtanium".

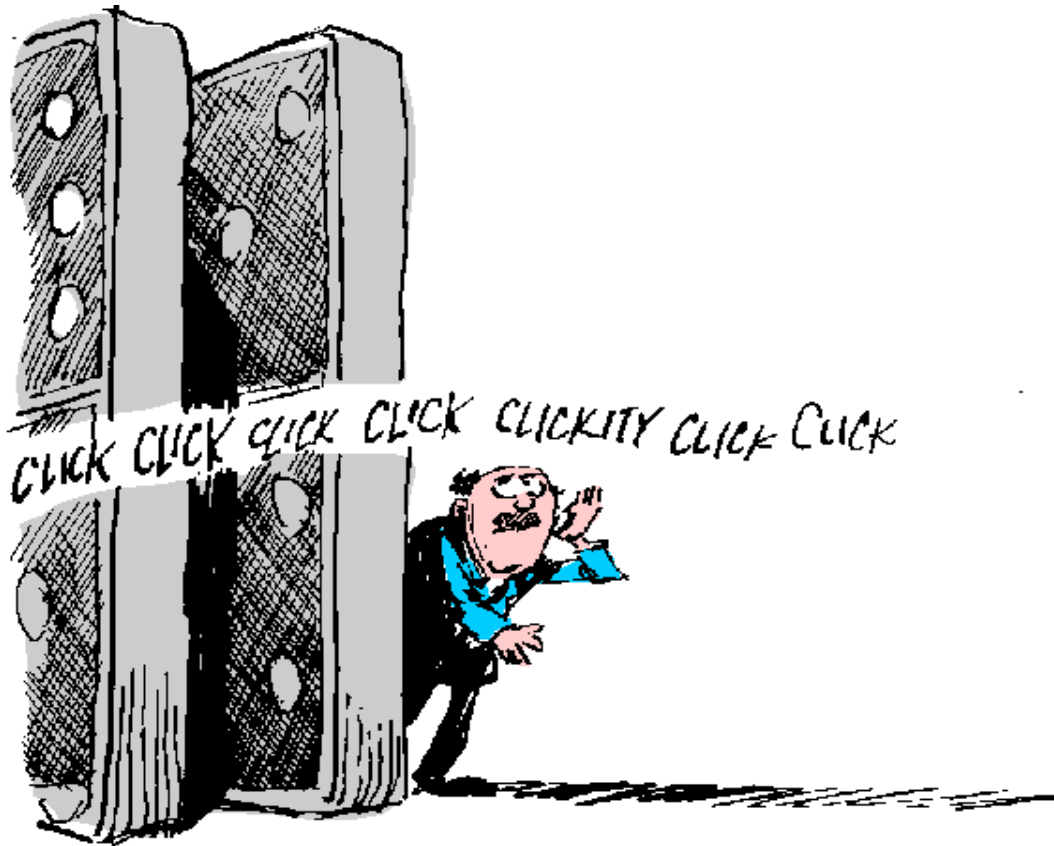
# Have a Resource Plan. Don't "Front-Load"



**Rule #2** - If you are headed for the Little Big Horn, get enough help before you go.



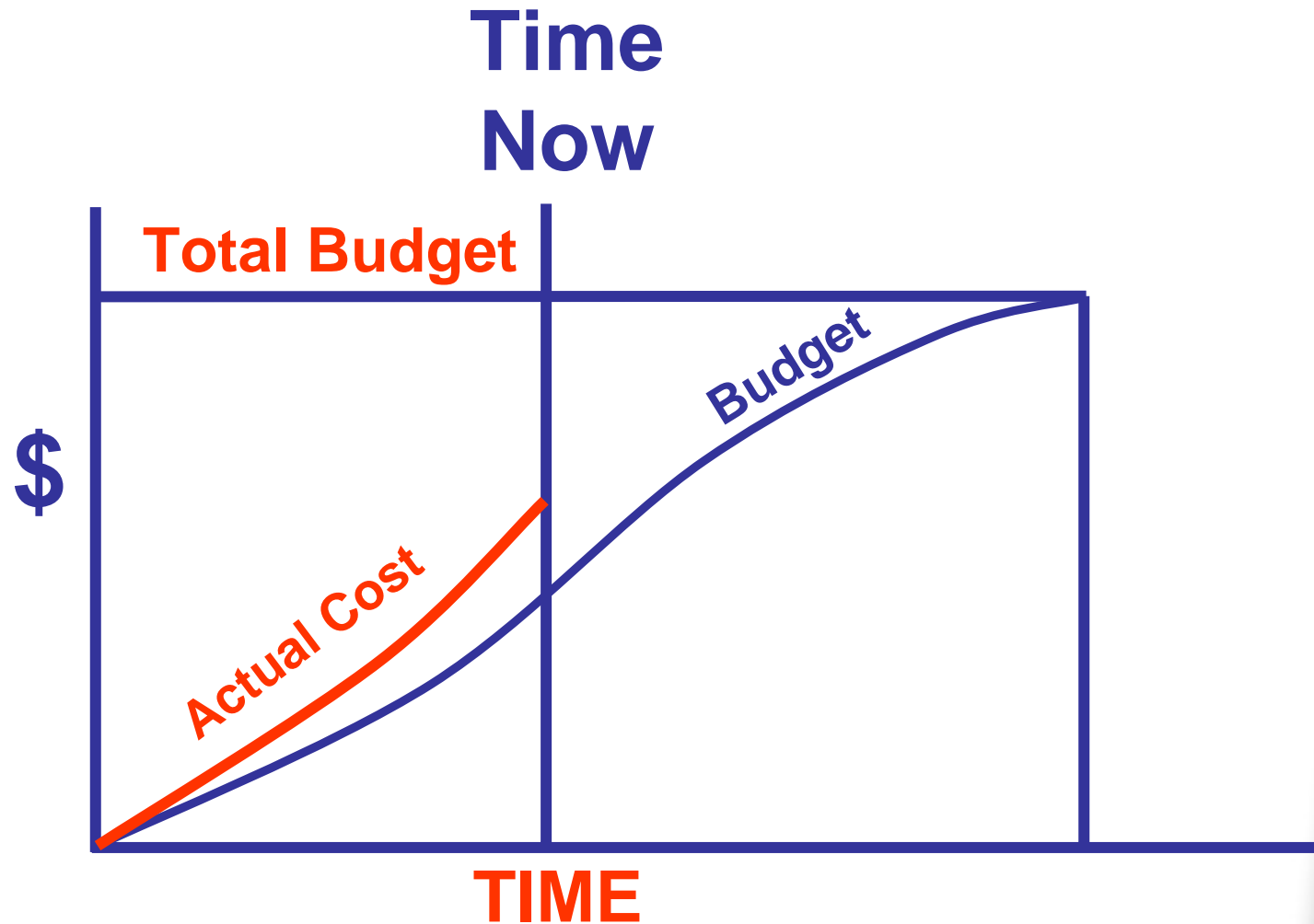
**Rule #2** - You won't understand the "Domino Theory" until the domino falls on **YOU**.



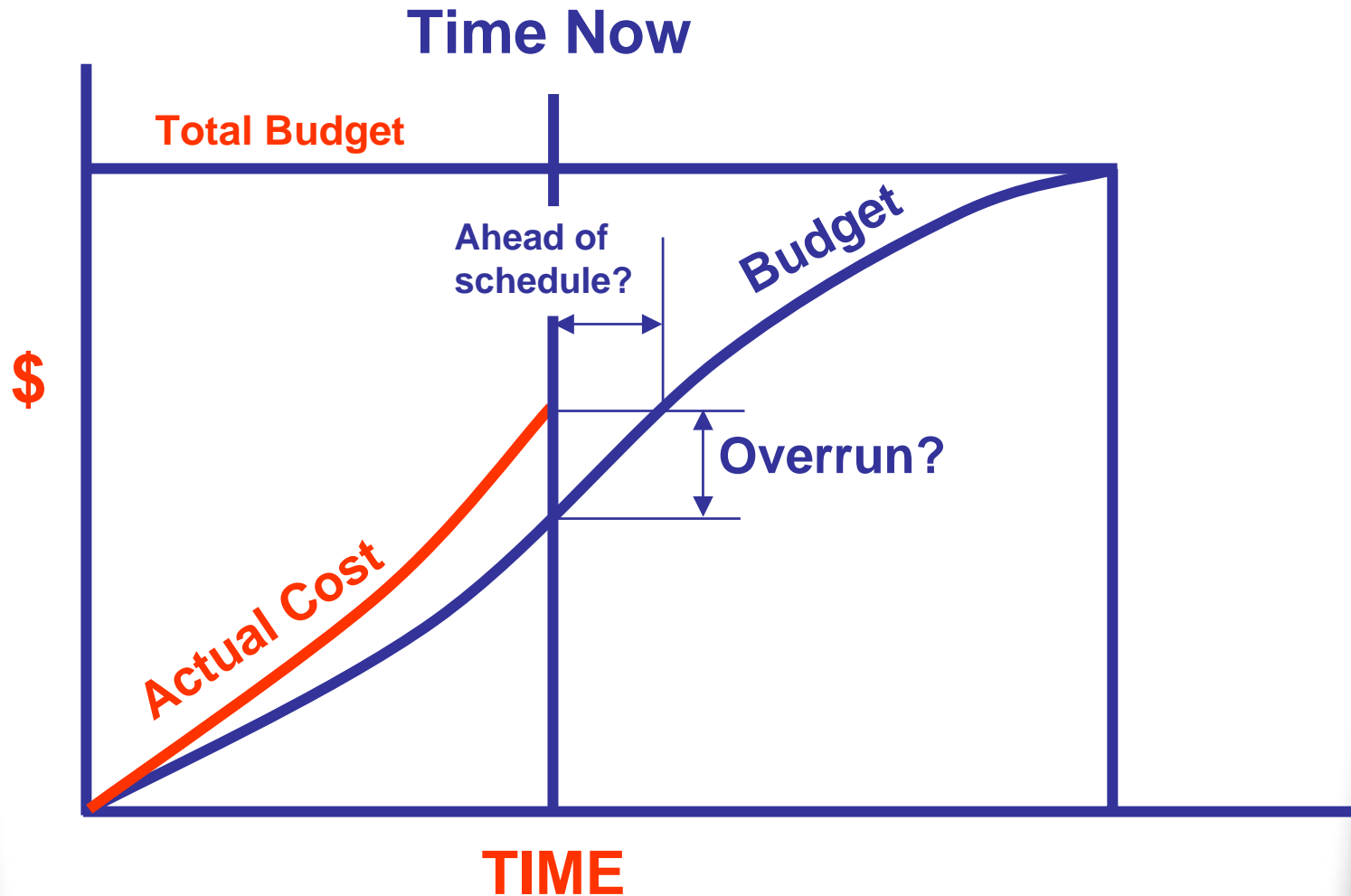
**Problems** follow a predictable sequence from a technical problem to a schedule problem to a cost problem.



# Budget Plan Vs. Actuals



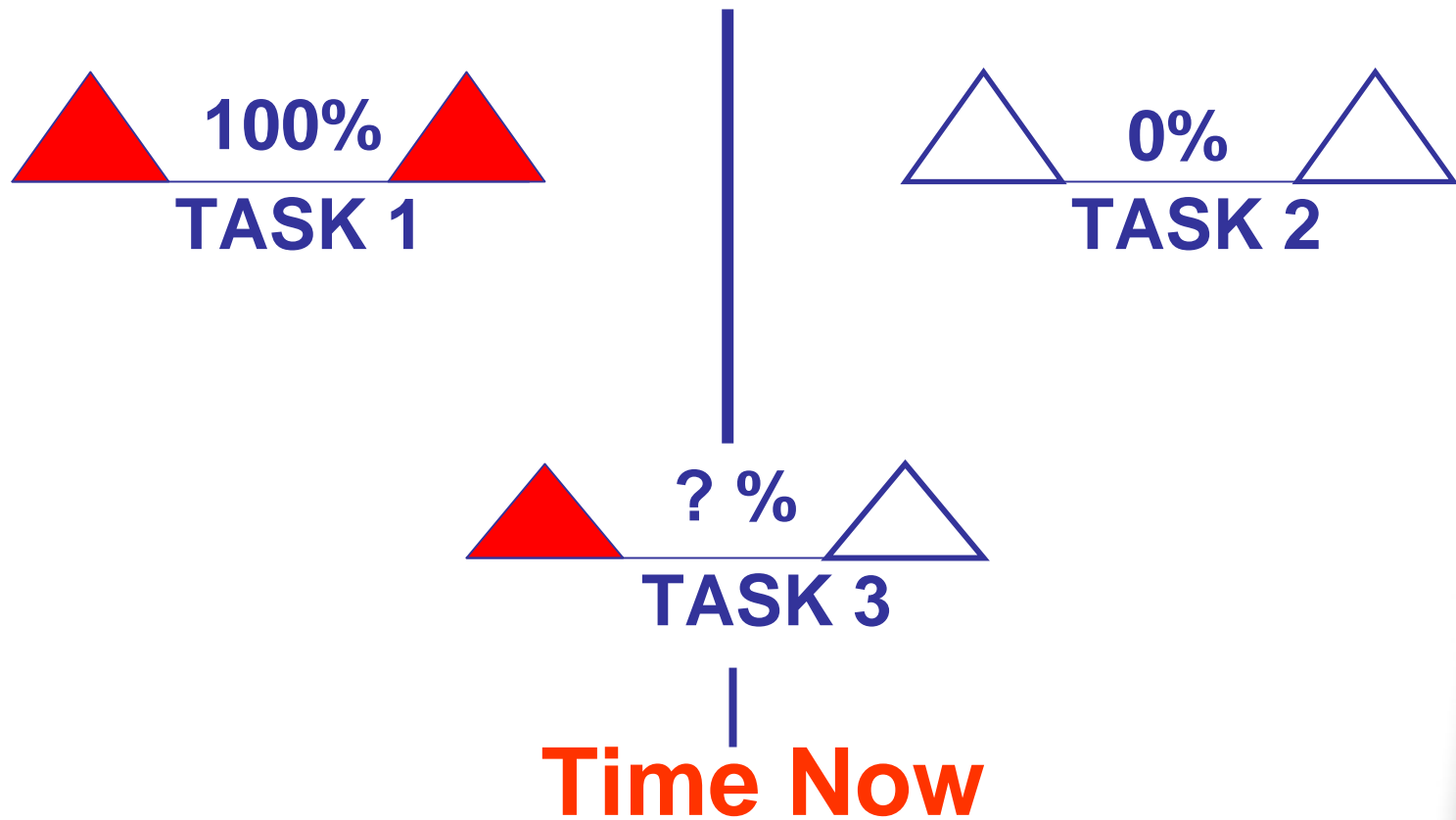
# Overrun or Ahead of Schedule?



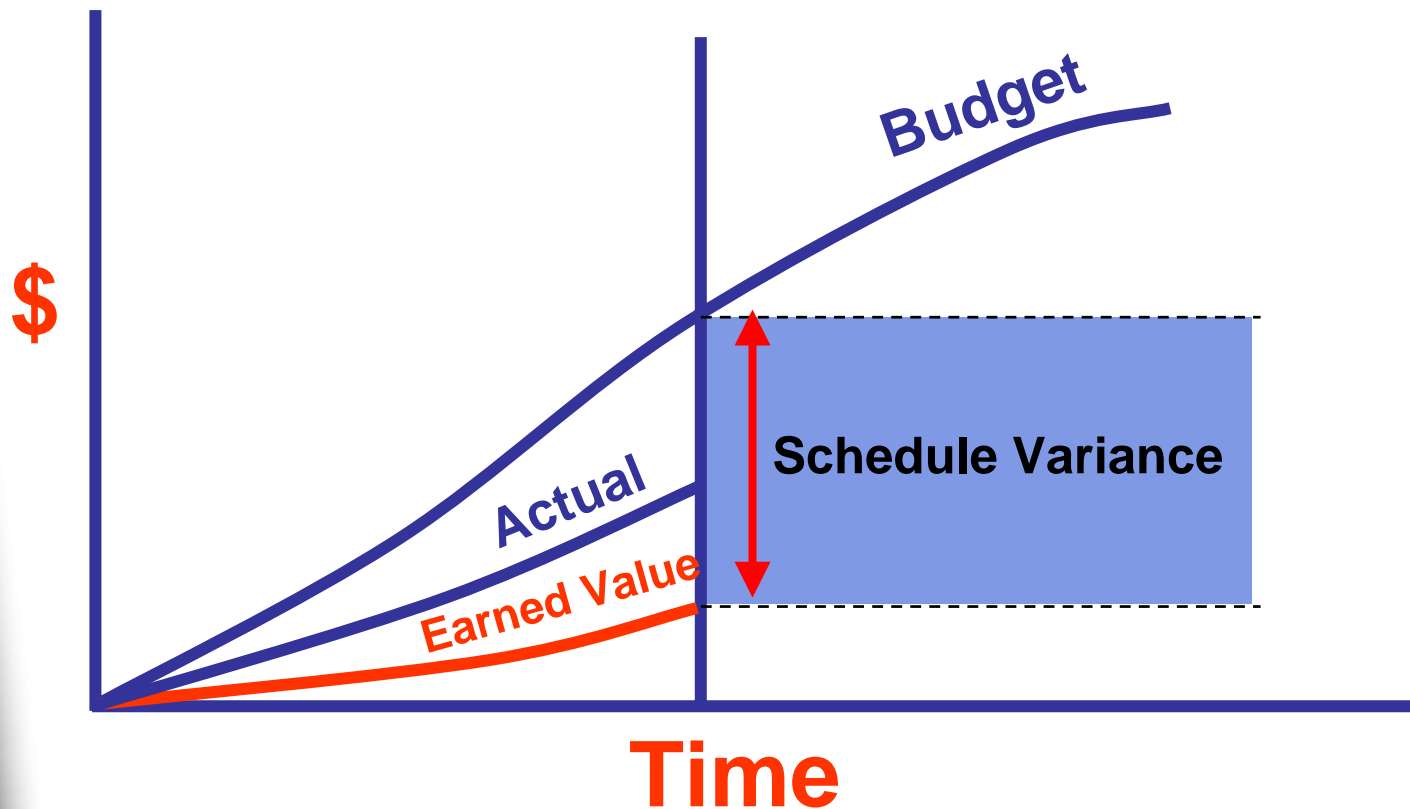
# What Has Been Accomplished?

- Tests performed
- Design review performed
- Lines of code designed/coded/tested
- Drawings completed
- Reports delivered
- Units delivered

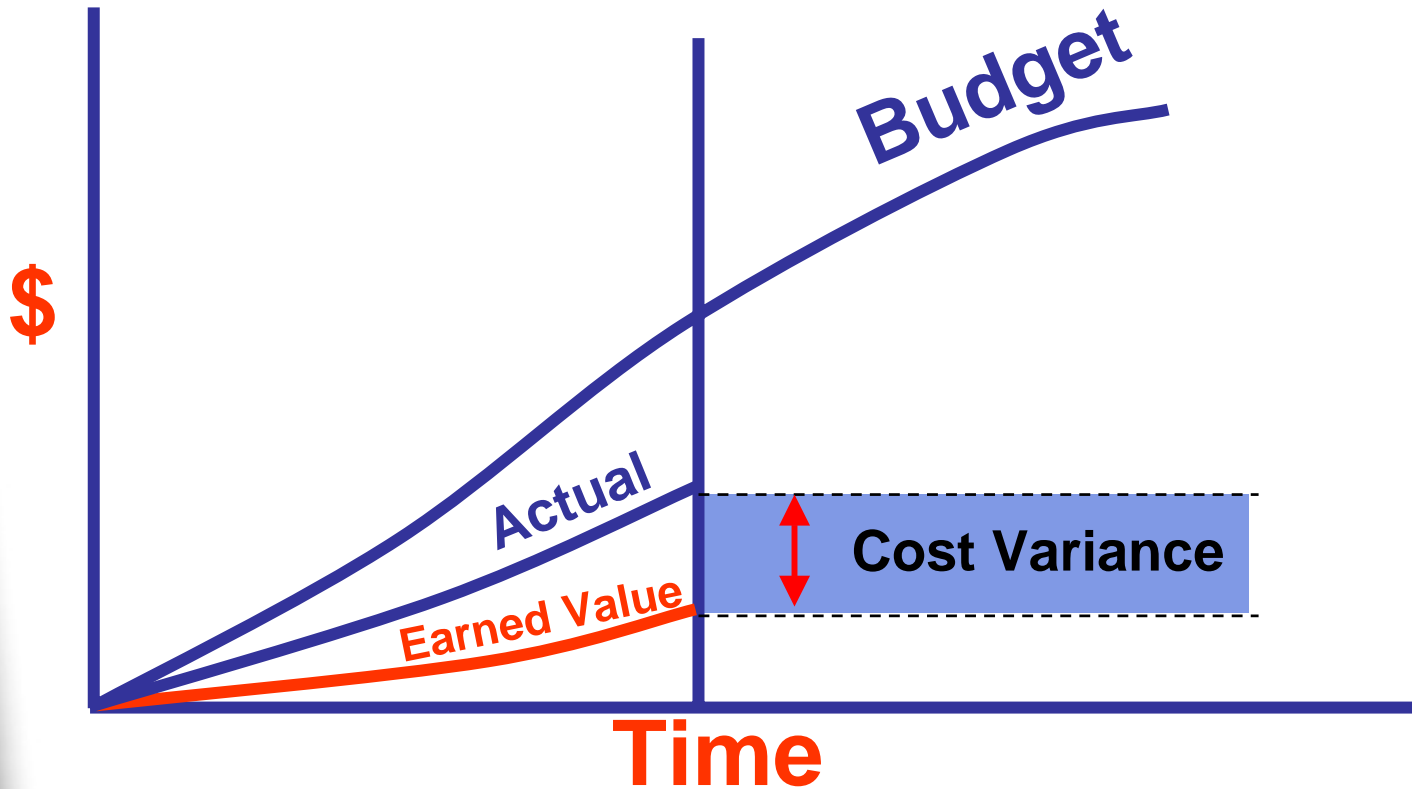
# Earned Value Of A Task



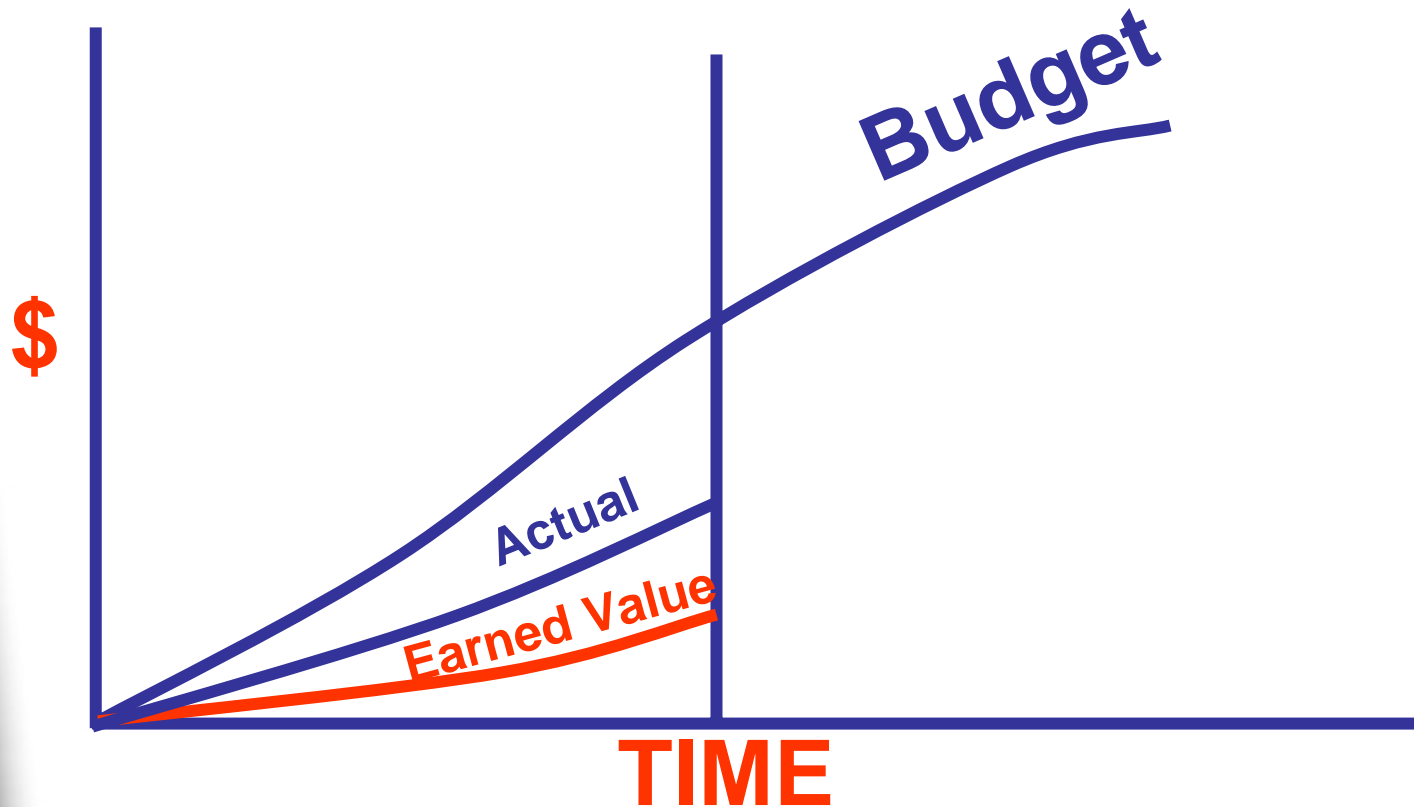
# Schedule Variance



# Cost Variance



# Earned Value Is A Good Approximation



TODAY your program is  
at 71% scheduled, 68% complete,  
74% of budget spent

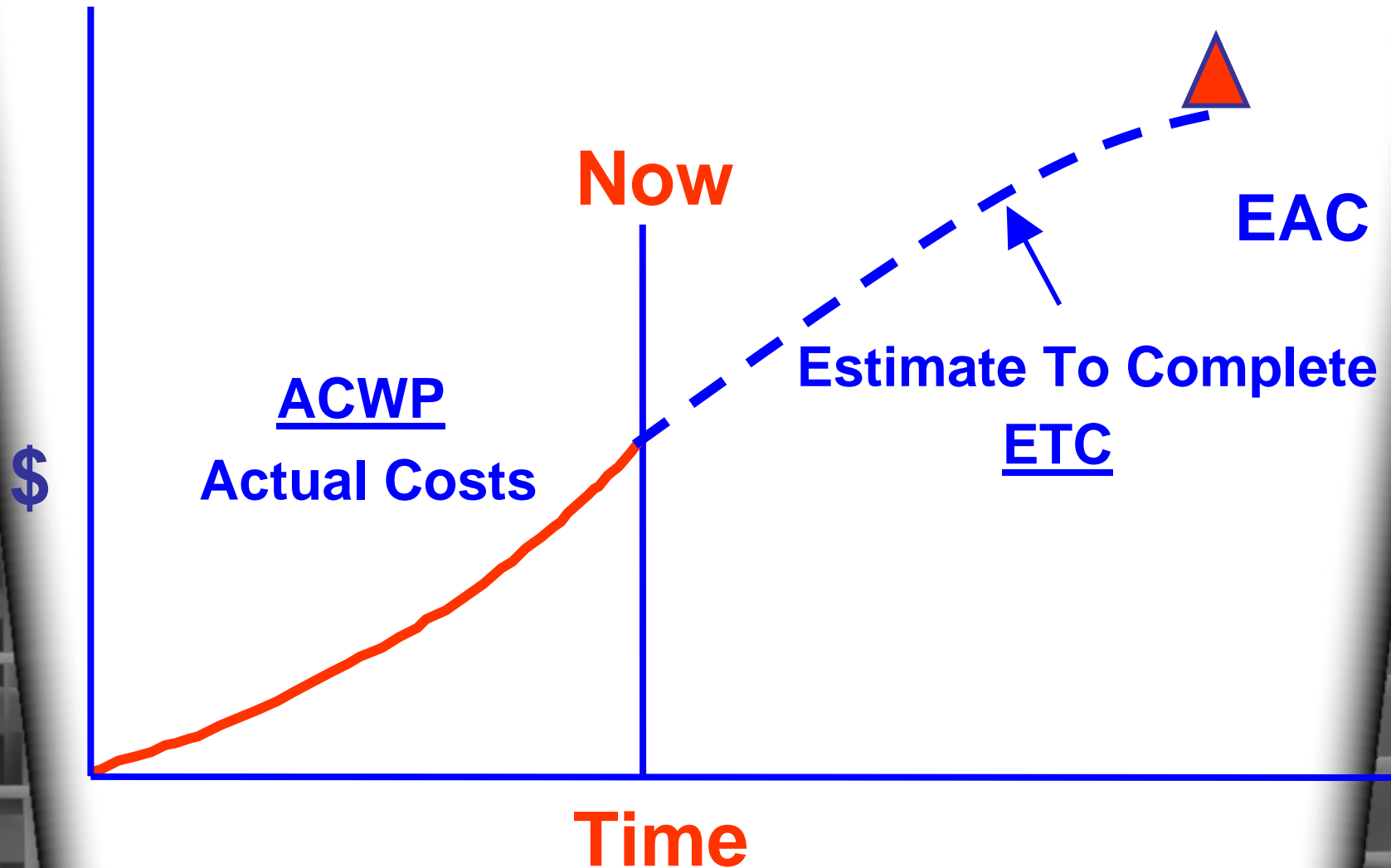
**Will your program complete...**

**Ahead/on/behind  
Schedule?**

**Under/on/over Cost?**



# Estimate At Completion

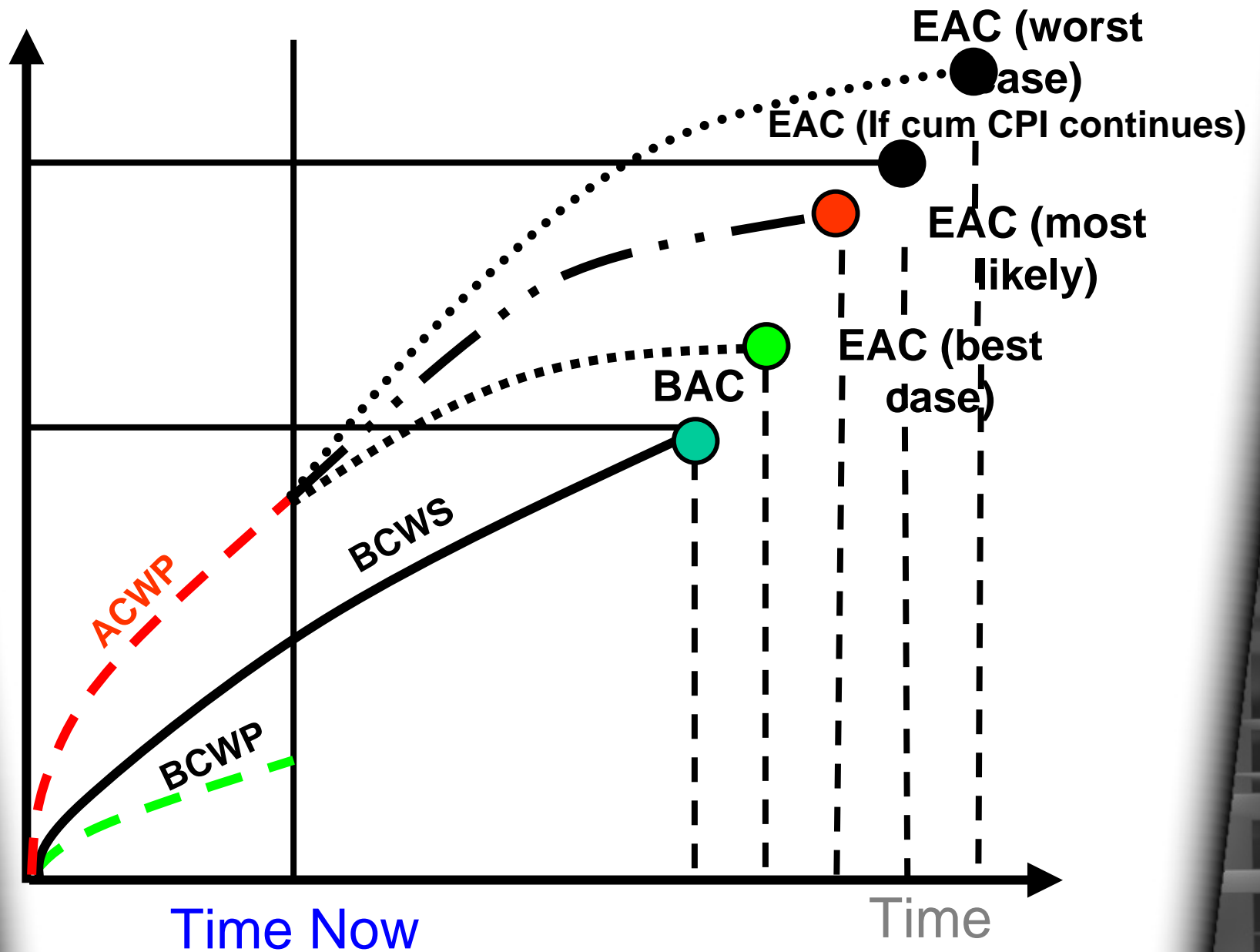


# Take Corrective Action Early



The best answer is not always throwing more resources at a problem; extra personnel may have a counter-effect.

**Rule #2** - Any more than ONE wrench on the end of a bolt doesn't help.



# There are no quick fixes or super heroes, only good management.

**Rule #2** – Superman is still just a baby and living on the planet **KRYPTON**.



**Corollary:**

A masked man on a white horse, may not turn out to be your **Friend**

# What Is Integrated Earned Value Management?

- **Data sharing between Technical, Schedule, and Cost Systems that permits:**
- **Concurrent review of project technical, schedule and cost requirements to provide a readily visible picture of program plans and status which:**
- **Enables the timely surfacing of program problems on a management by exception basis and the application of appropriate corrective actions**

# Where is Earned Value Going?

- **U. S. Government**
  - *Extends EV management to all agencies*
- **Civil Agencies**
  - *City & utility companies espousing concept & practice*
- **Commercial**
  - *University course promotion*
  - *Non-governmental companies espousing EV management*

# Current Trends

- **Current initiatives and trends are emphasizing:**
  - *Importance of project management as a professional discipline*
  - *Acceptance and use of performance metrics*
  - *Performance goals and workforce incentives*

# Common Experiences

- **Management commitment is necessary**
- **Resistance to visibility exists**
- **Resistance to change is often strong**
- **Understanding and using earned value data is necessary**
- **Reluctance to document is common**
- **Integration with other systems is often difficult**



# Characteristics of Successful Programs

- **Write an operational systems description**
- **Instill systems discipline**
- **Complete the control account plans**
- **Have a performance measurement baseline**
- **Perform status determination**
- **Check schedule traceability**

# Characteristics of Successful Programs

- **Check cost/budget reconciliations**
- **Prepare reports on time**
- **Have proficient control account managers**
- **Prepare orientation presentation**
- **Prepare the budget baseline log**

# EVMS = Good Project Management

- Organize - work and people
- Plan - Schedule and Budget
- Direct - Authorize and Empower
- Measure - Accomplishment
- Control - Revise as Necessary



An approach based on real-world  
experience using common sense can  
help you succeed in caging  
The **BEAST**



***The End of Presentation***

***Thank you for your  
participation***